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Linnton - Reports

Delta
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October 26, 2004
Project PTKM-01L-1

Mr. Don Pettit
Oregon Department of Environmental Quality
2020 SW Fourth Ave, Suite 400
Portland, OR 97201

RE: Work Plan for Final Phase of
Remedial Investigation Field Activities
KMLT Linnton Terminal
Portland, Oregon

Dear Mr. Pettit:

Delta Environmental Consultants, Inc. (Delta) has prepared this letter on behalf of Kinder Morgan Liquid Terminals, LLC (KMLT) to present a work plan to finalize the fieldwork portion of the Remedial Investigation for the above-referenced KMLT site. The site is located at 11400 NW St. Helens Road in Portland, Oregon (Figure 1). The goal of the proposed work is to collect additional field data to adequately characterize the petroleum hydrocarbons in the subsurface related to the site, and allow for completion of the Remedial Investigation (RI) report. The scope of work was developed based upon previously collected data and concerns from the Oregón Department of Environmental Quality (DEQ) expressed in our meeting on July 27, 2004.

During this meeting DEQ requested KMLT to address the following concerns:

- Down gradient extent of separate-phase hydrocarbons (SPH) observed in the vicinity of Well MW-16;
- Up gradient extent of SPH in the IRAM Containment Area; and
- Further define the extent of dissolved petroleum hydrocarbons between Wells MW-12 and MW-13 and the seawall.
- Extent and mobility of SPH observed in the vicinity of Well MW-11.

As discussed during the July 27, 2004 meeting, KMLT would like to complete those items critical for the finalization of the RI, while allowing for some assessment work in the Feasibility Study (FS). The following scope of work has been developed to further assess these areas of concern with respect to finalizing the upland RI for this site.

- Delineation of dissolved petroleum hydrocarbons between MW-12 and MW-13 and the seawall will be further assessed with the installation of proposed Well MW-25 (Figure 2). The location for Well MW-25 may be slightly adjusted in the field based upon drill rig access.

- Down gradient extent of SPH in the vicinity of Well MW-16 will be further assessed by the installation of proposed Well MW-26 (Figure 2).

- Up gradient extent of the SPH in the IRAM Area will be further assessed with the installation of Wells MW-27 and MW-28 (Figure 2).

- Down gradient extent and mobility of the SPH in Well MW-11 will be completed as part of the FS. Wells MW-1, MW-2, and MW-4 are located between Well MW-11 and the seawall, allowing for source control evaluation for the SPH associated with Well MW-11.

SCOPE OF WORK

The scope of work for this final phase of the RI field work to achieve the above stated goal consists of three tasks. These tasks are: work plan preparation; well installation; and data memorandum preparation.

TASK 1 – WORK PLAN PREPARATION

This letter serves as the work plan for the proposed final RI field activities.

TASK 2 - WELL INSTALLATION

The proposed assessment work will consist of installing four additional monitoring wells (MW-25 through MW-28) at the site in locations shown on Figure 2. The proposed location for Well MW-25 was chosen to evaluate the presence of dissolved petroleum hydrocarbons in the subsurface between the seawall and Well MW-13. The proposed location for Well MW-26 near Tank 55021 was chosen to further delineate the separate-phase hydrocarbons (SPH) observed during the recent investigation of the subsurface in the vicinity of the rail car loading rack. The final two proposed well locations (one near Tank 55022 and one near Tank 11017) will provide information to further define the lateral extent of SPH associated with the Interim Remedial Action Measures (IRAM) area of the site.

The borings for proposed Wells MW-25 and MW-26 will be completed using a drill rig equipped with hollow-stem augers. To complete the boring for MW-26, the drill rig will be lifted over the tank farm wall using a crane. The borings for Wells MW-27 and MW-28 will be completed using a hand auger to advance the soil borings due to the numerous above ground product lines in these two areas.

A monitoring well will be installed in each of the soil borings. The monitoring wells will be constructed using 2-inch diameter Schedule 40 PVC casing and well screen with 0.020-inch slots. The final completion depth of each well will be determined by the conditions encountered during drilling. Delta anticipates that the wells installed with a drill rig will be no deeper than 30 feet below grade. The wells installed using a hand augur will be installed to approximately 20 feet below grade. A sand pack will be placed in the annular space from the bottom of the boring to approximately two feet above the top of the screen interval. A sanitary seal will be installed on top of the sand pack in the annular space. This seal will consist of a layer of bentonite pellets and layer of cement. The wells will be secured with lockable well caps. The wellheads will be protected with traffic-rated utility monuments. After completion, the top of casing elevation for each well will be surveyed by a professional land surveyor.

It is anticipated that two soil samples will be collected from each of the borings for laboratory analysis. Soil samples will be analyzed for hydrocarbon identification: total petroleum hydrocarbons (TPH-HCID) with quantification if TPH is detected; benzene, toluene, ethylbenzene, and xylenes (BTEX), and naphthalene by USEPA Method 8021B; and polynuclear aromatic hydrocarbons (PAHs) by USEPA Method 8270M-SIM.

Groundwater samples will be collected from each newly installed monitoring well and analyzed for TPH as gasoline by Northwest Method NWTPH-Gx, TPH as diesel and oil by Northwest Method TPH-Dx, BTEX and naphthalene by EPA Method 8021B, and PAHs by USEPA Method 8270M-SIM.

All drilling, soil sampling and groundwater sampling will follow the protocols presented in the DEQ-approved RI Work Plan for the site.

The soil and groundwater samples will be transported to North Creek Analytical Laboratory (NCA) of Beaverton, Oregon for quantitative analysis. Analytical services will be billed directly to KMLT.

TASK 3 - PREPARATION OF DATA MEMORANDUM

Delta will prepare a memorandum documenting the proposed investigation results. The data memorandum will include a description of field activities and findings, tabulated summary of soil and groundwater analytical results, and a map showing the sample collection locations. This data will be incorporated into the final RI report for the site once Delta has received final comments from the DEQ.

SCHEDULE

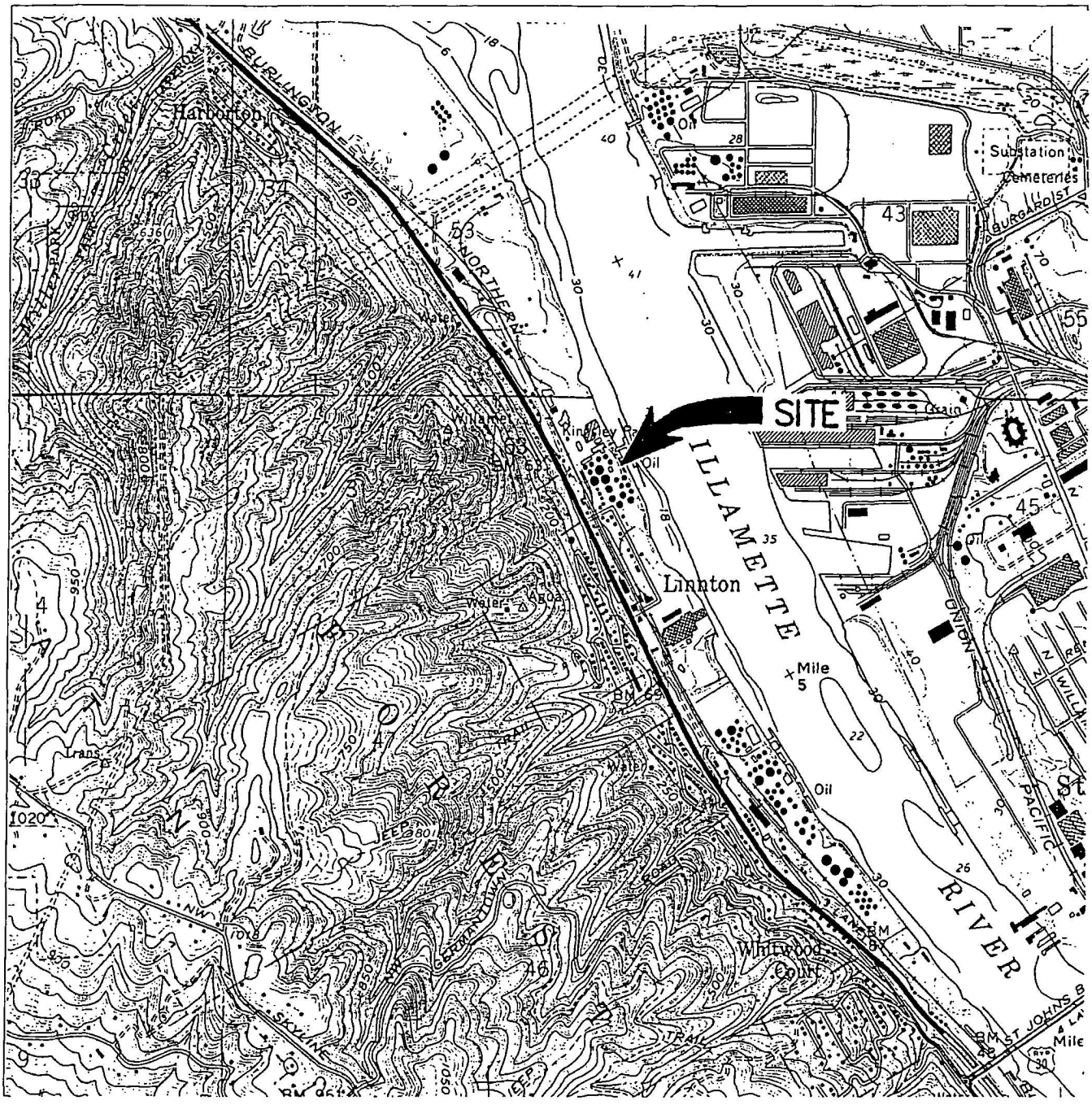
Once Delta has received approval from the DEQ, Delta will schedule the fieldwork. Delta anticipates that the field work will be completed during November 2004 – January 2005. The Data Memorandum will be submitted to DEQ within eight weeks after Delta receives analytical data from the laboratory. Please call the undersigned if you have any questions regarding the contents of this work plan.

Sincerely,
Delta Environmental Consultants, Inc.

Kelly A. Kline, R.G.
Senior Geologist

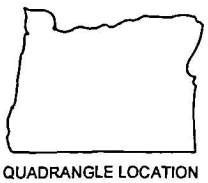
R. Scott Miller, P.E.
Principal Engineer

Attachment: Figure 1 – Site Location Map
Figure 2 – Site Map with Proposed Well Locations



REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
LINNTON, OREGON, 1961
PHOTOREVISED 1984

SCALE 1 : 25,000



QUADRANGLE LOCATION

FIGURE 1

SITE LOCATION MAP

Kinder Morgan Liquid Terminals LLC
Linnton Terminal
11400 NW St. Helens Road
Portland, Oregon

PROJECT NO. PTKM-01L-1	DRAWN BY CRF
FILE NO.	PREPARED BY CRF
REVISION NO.	REVIEWED BY

Delta Environmental Consultants, Inc.

North

WILLAMETTE RIVER

DOCK

CONTROL STATION

FIRE HOUSE

WALKWAY

CONTROL STATION

OUTFALL

OUTFALL

P-5

KMLT PROPERTY BOUNDARY

BULKHEADS

MW-2 RW-1 RW-2 RW-3 RW-4 RW-5

SEPARATOR #2

MW-1

MW-3

MW-25

SEPARATOR #1

MW-10 MW-20 MW-22

MW-8

RIP RAP BANK

GATE

MW-7

PLATFORM

MW-13

P-3

CONCRETE

WAREHOUSE "C"

MW-4

SALT TOWER

MW-19

17020

17018

17027

MW-21

45028

MW-12

P-4

SHOP

WAREHOUSE "B"

3034

MW-11

MW-9

S.P.P.I. & OLYMPIC MANIFOLD

BOILER & PUMP HOUSE

ELECTRICAL HOUSE

PUMP GROUP

11019

11017

30016

MW-28

WAREHOUSE "A"

MW-18

COVERED PLATFORM

2024

FORMER TANK 5025

MW-27

59029

P-2

MW-14

326

55023

55022

55008

20011

OFFICE

MW-17

FORMER HEATING OIL TANK LOCATION

MW-6

10007

TANK FARM CONTAINMENT WALL

TRUCK LOADING RACK

FIRE PUMP

VRU1

WAREHOUSE "D"

2502

2501

2503

5004

MW-26

55021

P-1

CONCRETE

MW-23

RC-6

RC-3

MW-16

RC-4

RC-8

OLYMPIC PIPELINE PUMP STATION

MW-5

GATE

MW-15

RAIL CAR LOADING RACK

GATE

FENCE

RC-9

RC-5

RC-1

MW-24

RC-2

RC-7

PORTLAND & WESTERN RAIL ROAD

RC-10

0 60 FT

APPROX. SCALE

LEGEND

MW-25 Proposed Groundwater Monitoring Well Location and Designation

RC-1 Geoprobe Location and Designation

MW-2 Groundwater Monitoring Well Location and Designation

P-1 Piezometer Location and Designation

RW-1 Recovery Well Location and Designation

FIGURE 2

SITE MAP WITH PROPOSED WELL LOCATIONS

Kinder Morgan Liquid Terminals LLC
Linnton Terminal
11400 NW St. Helens Road
Portland, Oregon

PROJECT NO. 830-01F	DRAWN BY CRF
FILE NO.	PREPARED BY 10/20/04
REVISION NO.	REVIEWED BY

Delta Environmental Consultants, Inc.